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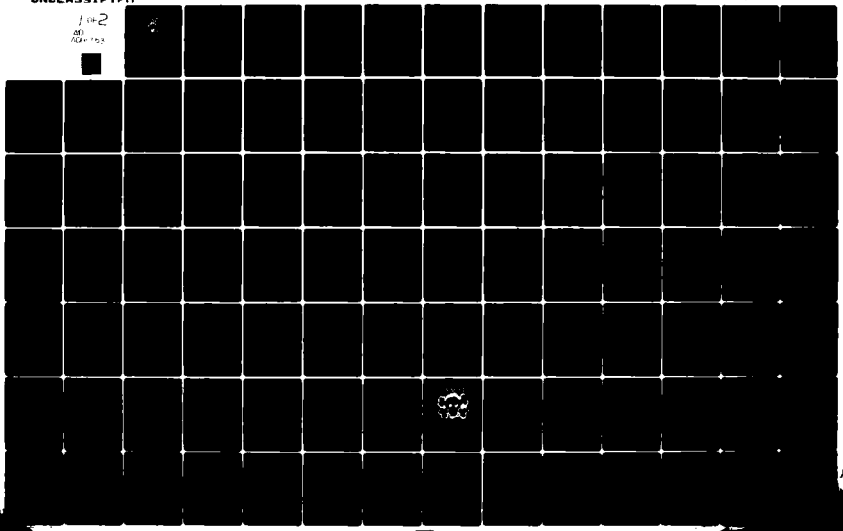

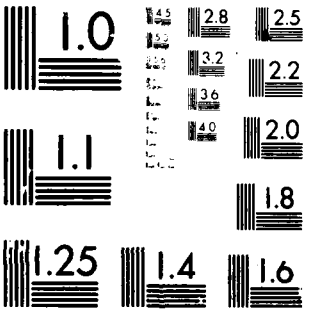

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LEADERSHIP PROFILE OF A
SUCCESSFUL MILITARY MIDDLE MANAGER

by

Rodney Lee Hicks

December 1979

Thesis Co-Advisors: J. Senger
R.A. Weitzman

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The military, in general, and the Navy, in particular, are plagued by human resource problems which many attribute to the quality of leadership in the services. The emphasis of this study is to determine how successful career oriented military officers compare to their civilian counterparts on two very important dimensions of leadership: consideration and structure. And, whether any key background factors impact on the levels of

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consideration and structure among military officers. Utilizing the Leadership Opinion Questionnaire, this researcher surveyed four hundred and five (405) military officers at the Naval Postgraduate School to determine their level of consideration and structure. It was found that, of the background factors, age impacts most heavily on these dimensions of leadership and that the military in general and the Navy in particular compare unfavorably with their civilian counterparts on the dimension of consideration. It is recommended that a thorough reevaluation be accomplished of the design and implementation of the Navy's new Leadership Management Education and Training program to insure that consideration be emphasized at the outset of training; during the commissioning process and be continued throughout an officer's leadership training and career.

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Leadership Profile of a Successful Military Middle Manager

by

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Lieutenant, United States Navy
B.A., The University of Richmond, 1973

Submitted in partial fulfillment of the requirements for the degree of

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The military, in general, and the Navy, in particular, are plagued by human resource problems which many attribute to the quality of leadership in the services. The emphasis of this study is to determine how successful career oriented military officers compare to their civilian counterparts on two very important dimensions of leadership: consideration and structure. And, whether any key background factors impact on the levels of consideration and structure among military officers. Utilizing the Leadership Opinion Questionnaire, this researcher surveyed four hundred and five (405) military officers at the Naval Postgraduate School to determine their level of consideration and structure. It was found that, of the background factors, age impacts most heavily on these dimensions of leadership and that the military in general and the Navy in particular compare unfavorably with their civilian counterparts on the dimension of consideration. It is recommended that a thorough reevaluation be accomplished of the design and implementation of the Navy's new Leadership Management Education and Training program to insure that consideration be emphasized at the outset of training, during the commissioning process and be continued throughout an officer's leadership training and career.

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I. INTRODUCTION

A. AN OVERVIEW

Historically, the military has encouraged and rewarded effective leadership through an elaborate means of sanctions, acknowledgments and awards. Vast resources have been placed at the disposal of those considered to be in possession of exceptional leadership skills in complete confidence that these men would effect the best possible results. It seems ironic that the concept of effective leadership which is held so dear and rewarded so highly should seem to be so poorly understood. From a strictly financial standpoint, few investments could realize the return that research into the development of effective leaders could yield, if as a result, men could hone their leadership skills to such a degree as significantly to improve the functioning of their organizations.

The military, in general, and the Navy, in particular, have determined that the study of leadership and subsequent training of effective leaders is of critical importance. A long history of involvement in this area can be traced back to the initial authorization by Congress in August of 1946 for the creation of the Office of Naval Research (ONR). Many prominent behavioral scientists and researchers have made substantial contributions to the study of leadership while operating under grants from ONR.

In 1978 the Navy Manpower Personnel Command (NMPC-6) and McBer Inc., developed the latest iteration of leadership training for the Navy known as Leadership Management Education and Training (LMET). The design and subsequent implementation of this program was a concern of this author, in that, LMET was vocused on developing a curriculum which identified those skills possessed by "superior" leaders and involved in "superior" leadership, and the transfer of those skills to enhance the leadership capabilities of key people. The research design is intended to determine those leadership traits possessed by "superior" leaders, without concern for any key leadership traits that may be lacking in Naval leaders. Was the Navy emphasizing certain traits held by leaders without regard to other traits that may be lacking within the cadre of military managers? It was felt that with the abundance of leadership problems facing the military at present it was imperative that the Navy not only reinforce those traits perceived to be held by "superior" leaders but also determine what, if any, traits were lacking within military leaders, and attempt to rectify the shortcoming.

Throughout leadership research we find that two separate functional demands seemed to be placed upon a leader: a concern for achieving the goals of the organization and a concern for the well being and satisfaction of the members of the group. Of course there are other functions that characterize the leadership role, but the abundance of literature

concerning the task orientation and social emotional function impeled this researcher to examine their dual demands in more detail.

As Senger (1971) points out,

> these functions have been given many names by many writers. Among the more well known are 'initiating and directing structure' and 'consideration' (Halpin, 1954); 'task specialization' and 'social specialization' (Bales, 1958); 'power orientation' and 'personnel orientation' (Schutz, 1955); 'achievement' and 'group need satisfaction' (Berrien, 1961); 'task specialization' and 'maintenance specialization' (Krech, Crutchfield, and Ballachey, 1962); 'concern for people' and 'concern for production' (Blake and Mouton, 1964); 'instrumental leadership' and 'expressive leadership' (Etzioni, 1965); 'support and interaction facilitation' and 'goal emphasis and work facilitation' (Bowers and Seashore, 1966); and 'task orientation' and 'relationship orientation' (Fiedler, 1967).

This researcher chose to use the terms "consideration" and "structure" (Fleishman, 1969) to delineate these two <u>major</u> dimensions of leadership.

The emphasis of this study is to determine how successful, career oriented military officers compare to their civilian counterparts in middle management position on the factors of consideration and structure. And, whether any key background factors have an effect on the level of military manager's consideration and structure.

There are as many measuring devices of these two traits as there are names for the dimensions, some of which are completed by the leader himself, or by the leaders peers, superiors, or subordinates. Among these inventories we find

the Leader Description Questionnaire (Hemphill, Seigle, and Westie, 1951); the Leadership Opinion Questionnaire (Fleishman, 1957); the Managerial Grid (Blake and Mouton, 1964); the Least Preferred Co-Worker Scale (Fiedler, 1967); and the Leader Effectiveness and Adaptability Description (Hershey and Blanchard, 1972). It was felt that due to its established reliability, brevity and ease of completion that the Leadership Opinion Questionnaire (LOQ) was the most appropriate device to use in this study. Further justification and rationale for the use of this measuring device will be presented in subsequent chapters. At this point it seems appropriate to investigate the history of leadership research.

B. LITERATURE REVIEW

1. The Early Leadership Studies

The concept of leadership has enjoyed a prominent position within managerial and psychological literature over the last forty years. In their earliest form leadership studies were quite speculative and assumed a quasi-philosophical air. The failure of these early studies to produce any meaningful results can be partially attributed to the lack of rigor employed by the armchair theorist and partially to a lack of inter-investigator agreement on definitions of the subject matter.

The first of these approaches attempted, and to fail, was initiated in the 1940's and entitled the "trait" approach. As mentioned previously, a lack of inter-investigator agreement

was a harbinger of this strategy's lack of success in developing a set of traits peculiar to and universally found within leaders. Stogdill (1948) in a review of the pre 1948 literature found little encouraging agreement among investigators as to psychological, physical and personality traits. As pointed out by Gouldner (1950) the trait approach failed primarily because the traits were poorly conceived, the measurements were crude and unreliable and most importantly, the traits were not possessed exclusively by leaders but by non-leaders as well.

The failure of the trait approach sired the development of the "situation" approach. Tasks requiring varying degrees of involvement, training and leader-follower interaction were examined. Under this process, common situational elements were sought and attempts made to relate them to significant leader characteristics. Stogdill (1948) emphasized that "the qualities, characteristics, and skills required in a leader are determined to a large extent by the demands of the situation in whcih he is to function as a leader." The situation approach was relatively short-lived as investigators soon realized that the number of unique situations requiring leadership was so vast as to preclude effective and relevant study by this means.

The third of these early approaches to the study of leadership is that centered around the follower. The assumption here was that the most effective leader is the one who best satisfies his followers needs. Although this aspect of

the earliest studies was relatively insignificant in its own right it became a springboard from which the more rigorous studies began.

It became apparent that each of the facets described, the leader, the situation and the follower, are inextricable in any dynamic environment and must all be dealt with jointly. Sanford (1952) emphasized this in writing "to concentrate on any one of these facets of the problem represents over simplification of an intricate phenomenon."

2. Later Leadership Studies

To say that the early studies in leadership served no function would be unfair and definitely untrue. Although quasi-philosophical in nature and lacking in significant findings they did, as do all pioneer projects, begin to blaze the trail for later studies. As a result of the early studies, investigators now knew that the three facets of leadership could not be studied completely independently, that there was a need for more meaningful and universally accepted definitions and that there was a need to place more emphasis on the rigor of experimental and quasi-experimental design in their studies in order to produce more meaningful results.

A chronological break between what has been termed "early" and "later" studies in leadership does not exist in an absolute sense. Surely there were those during the early studies who preferred procedures that embraced the scientific method but their contribution did not become readily apparent

as their methods and tools were crude. In a similar vein, there are those investigators today who, despite the advances made in behavioral science to improve the validity and reliability of leadership studies, continue to employ one shot case studies and participant observation exclusively as their means of exploring and explaining the topic of leadership.

3. The Development of the Leadership Opinion Questionnaire

The number of investigators who have researched the topic of leadership in recent years and their contributions are varied and numerous. Undoubtedly one of the most prominent studies relevant to the present research project is the Ohio State University leadership studies (1946-1956), under the direction of Dr. Carrole Shartle. The key people there during the late forties and early fifties period were Roger Stogdill, John Hemphill, Donald Campbell, Alvin Coons, Melvin Seaman and E.A. Fleishman. Much of their research was funded under the auspices of ONR. They originally developed a survey known as the Leader Behavior Description Questionnaire (LBDQ).

As has been pointed out, during this period of study, there were two extremes concerning leadership theory. At one extreme, leadership was thought of as a personality trait, or at least a combination of personality traits, which some people have and others do not. To pick a leader, it was assumed one only need find people who had these traits well developed. The catch was that it was difficult to determine exactly what these traits were. At the other end

of the leadership theory spectrum were those that proposed the situational approach, that traits describing successful leaders in one situation were the same as those which described successful leaders in others. A middle ground was finally agreed upon at the Personnel Research Board of the Ohio State studies where it was assumed that the group situation was highly important, but that there are also some general principles about individual leadership traits that reflect upon the concept of leadership (Fleishman, 1973).

Primarily under the direction of John Hemphill, members of the Personnel Research Board and others set about generating statements descriptive of a wide range of supervisory behavior. This effort resulted in the compiling of about 1800 or more such statements. After elimination of duplicates and overlap, including conducting a factor analysis, a provisional set of ten categories of leader behavior were developed which seemed to describe the behavioral items associated in these categories (Hemphill, 1957).

The ten categories were:

1. Initiation: frequency supervisors originate, facilitate, or resist new ideas or new practices.

2. Representation: the frequency with which a leader defends his group against attack, and advances the interest of the group.

3. Fraternization: the frequency with which a supervisor mixes with the group or stresses informality.

4. Organization: the frequency the supervisor defines or structures his own work, or work of the members.

5. Domination: the frequency a supervisor restricts the behavior of individuals or the group in their activities.

6. Recognition: the frequency a supervisor engages in behavior which expresses approval or disapproval of group members.

7. Production emphasis: the frequency with which the supervisor sets levels of effort or prods members for greater effort or achievement oriented toward volume of work.

8. Integration: the frequency with which a supervisor tries to increase cooperation among group members.

9. Communication - down: frequency the supervisor provides information to group members to increase understanding and knowledge about what is going on.

10. Communication - up: frequency the supervisor seeks information and tries to keep informed about what is going on in the group (Fleishman, 1973).

The original Leader Behavior Description Questionnaire contained 150 items measuring each of these ten leadership items with roughly fifteen items to each dimension. When these questionnaires were administered to subordinates who described their supervisors in a wide variety of different kinds of group leadership situations, a high correlation among these patterns and overlap among the items assigned to these patterns was revealed.

In an attempt to determine empirically the factor structure of the LBDQ, a factor analysis of the items that made up responses to the LBDQ was undertaken. Dr. Fleishman describes the events, as they occurred: "I can still recall the excitement as Ben Winer, using a hand calculator applied the Wherry-Winer iterative method of factor analysis to the

item data" (Fleishman, 1973). The factors extracted were rotated to orthogonality and then to simple structure. The two major factors present were determined to be Consideration (C) and Structure (S) (Fleishman, 1953).

Dr. E.A. Fleishman designed the LOQ with the dimension of C and S in mind. The two scores provided by this questionnaire are defined as follows:

> Consideration (C) reflects the extent to which an individual is likely to have job relationships with his subordinates characterized by mutual trust, respect for their ideas, consideration for their feelings, and a certain warmth between himself and them. A high score is indicative of a climate of good rapport and two-way communication. A low score indicates the individual is likely to be more impersonal in his relations with group members.
>
> Structure (S) reflects the extent to which an individual is likely to define and structure his own role and those of his subordinates toward goal attainment. A high score on this dimension characterizes individuals who play a very active role in directing group activities through planning, communicating information, scheduling, criticizing, trying out new ideas, and so forth. A low score characterizes individuals who are likely to be relatively inactive in giving direction in these ways (Fleishman, 1969).

The LOQ has been described as a Likert-type attitude scale which attempts to assess how the supervisor thinks he should behave in his leadership role (Korman, 1966). The instrument, in its present form is the product of more than eighteen years of research and use in a variety of industrial and other organizations. The LOQ has been translated into many different languages including Dutch, Swedish, Norwegian, Finnish, Japanese, Polish, Turkish, and Hebrew. The survey

has kept many graduate students and professional theorists busy trying to explain its meaning and seek its validation.

4. Prior Research Findings

Some of the results ascertained utilizing the LOQ in a variety of organizational settings are intriquing and are considered to be especially interesting.

Bass (1958), as a part of a program for predicting success of sales supervisors, administered the LOQ to forty-two (42) individuals. Three years later top management rated the same group of salesmen on overall effectiveness. The correlation between favorable ratings and Structure was .05 and for Consideration .32, which was statistically significant at the .05 level. Performance ratings were again determined five years after the original survey, with Consideration continuing to have a validity of .37. The company was primarily concerned with the supervisors ability to develop subordinates and apparently the Consideration score was more predictive of this ability over a period of time than any other measures of personality, sales knowledge, and intelligence used by this company.

Parker (1963) found in a study of 80 pharmaceutical warehouse foremen that Consideration and Structure were correlated significantly with a number of group effectiveness criteria. The investigator concluded that, "workers have favorable attitudes toward supervisors who are considerate yet provide some degree of structuring behavior."

Fleishman and Ko (1962), conducted their research on 88 department managers in 10 shoe manufacturing plants. In this research it was discovered that a disproportionate number of managers got high ratings from their superiors when they had a high-Consideration high-Structure pattern, the lowest rated pattern seems to be low-Structure low-Consideration combination. When the plant superintendents of this same company were given the LOQ and their plants performance rated by top management, the correlations with the plant ratings were .42 and .34 for Structure and Consideration respectively. Thus, when entire plants were compared significant relationships were found between the leadership styles of the plant managers, as measured by the LOQ, and the rated effectiveness of their plants.

Correlations of Consideration and Structure dimensions have been obtained with another parallel questionnaire, The Supervisory Behavior Description, a stepchild of the LBDQ. This questionnaire is typically used by subordinates to describe their superiors. Although one should not assume comparable validity for the LOQ, these correlations at least confirm that the dimensions of Consideration and Structure relate to independent group performance measures. Thus correlations of .47 and -.31 have been obtained for Structure and Consideration respectively, against paired comparison proficiency rating of supervisors in a truck plant. Consideration correlated -.49 and .42 with subordinate's absenteeism and

accident rate respectively and Structure correlated .27, .45, .51 with absences, grievances and turnover (Fleishman, Harris and Burtt, 1955).

Curvilinear relationships have also been found between Consideration and Structure and turnover rates (Fleishman and Harris). These findings were confirmed by a study of textile plants by Skinner (1969). Another finding of the Fleishman and Harris study was that supervisors high in Consideration had low grievance and turnover rates and when they also had high Structure, grievances and turnover remained low. This was not true for foremen low in Consideration, these foremen had high grievance from, and turnover of employees, regardless of their Structure scores. In other words, the high-Consideration high-Structure foremen had relatively low turnover and grievance rates among their employees.

This finding, that above average scores for both Consideration and Structure may be optimum, has been recurrent throughout th literature. Hemphill (1955), found department heads at a large University with this pattern had departments with the best reputations in terms of ratings by other departments. Halpin (1957) found Air Force aircraft commanders with this pattern had the highest proficiency ratings. And, in a study of Israeli foremen conducted by Fleishman and Simon (1968), those rated highest by management also turned out to be higher on both Consideration and Structure behavior.

Nowhere in the literature was it found that the LOQ had been administered to a large group of military middle managers, although it has been used with NROTC cadets and petty officers.

C. THE HYPOTHESES

As has been stated, the objectives of this study are to determine (a) how successful military middle managers compare to their civilian counterparts in middle management positions, and (b) whether any key background factors have an effect on the level of consideration and structure among military officers.

The hypotheses dealing with the demographic factors will be delineated before the major hypotheses concerning military versus civilian means for the dimensions of consideration and structure.

Originally the author had intended to compare the means for samples of non-whites and females with whites and males, but the hypotheses dealing with the impact of race and sex on the scores of the LOQ were necessarily negated due to small response rates from females and non-whites.

A. Concerning age, the hypotheses are:

HS 1: Officers 32 and above ($\bar{A}$) have lower structure than those age 31 and below ($\underline{A}$).

HC 1: The mean level of consideration among officers 32 and older ($\bar{A}$) is higher than the mean level of those 31 and below ($\underline{A}$).

Age (structure)

HS 1

H_o: $\mu_S\ \overline{A} \geq \mu_S\ \underline{A}$

H_1: $\mu_S\ \overline{A} < \mu_S\ \underline{A}$

Age (consideration)

HC 1

H_o: $\mu_C\ \overline{A} \leq \mu_C\ \underline{A}$

H_1: $\mu_C\ \overline{A} > \mu_C\ \underline{A}$

B. The hypotheses relating to rank are:

HS 2: Officers ranked 04 and above ($\overline{04}$) are less structured than their associates ranked 03 and below ($\underline{03}$).

HC 2: Officers ranked 04 and above ($\overline{04}$) are more considerate than their associates ranked 03 and below ($\underline{03}$).

Rank (structure)

HS 2

H_o: $\mu_S\ \overline{04} \geq \mu_S\ \underline{03}$

H_1: $\mu_S\ \overline{04} < \mu_S\ \underline{03}$

Rank (consideration)

HC 2

H_o: $\mu_C\ \overline{04} \leq \mu_C\ \underline{03}$

H_1: $\mu_C\ \overline{04} > \mu_C\ \underline{03}$

C. The hypotheses dealing with commission source are:

HS 3: Academy graduates (acad) are more structured than their officer candidate (ocs) commissioned brethren.

HC 3: Academy graduates (acad) are less considerate than their officer candidate (ocs) commissioned brethren.

Commissioning (structure)

HS 3

H_o: $\mu_S\ \text{acad} \leq \mu_S\ \text{ocs}$

H_1: $\mu_S\ \text{acad} > \mu_S\ \text{ocs}$

Commissioning (consideration)

HC 3

H_o: $\mu_C\ \text{acad} \geq \mu_C\ \text{ocs}$

H_1: $\mu_C\ \text{acad} < \mu_C\ \text{ocs}$

D. The hypotheses dealing with years of commissioned service are:

HS 4: Personnel with nine or more ($\overline{9}$) years service are less structured than those with eight ($\underline{8}$) or fewer.

HC 4: Personnel with nine or more ($\overline{9}$) years service are more considerate than those with eight ($\underline{8}$) or fewer.

Years of service (structure)	Years of service (consideration)
HS 4	HC 4
H_o: $\mu_S\ \overline{9} \geq \mu_S\ \underline{8}$	H_o: $\mu_C\ \overline{9} \leq \mu_C\ \underline{8}$
H_1: $\mu_S\ \overline{9} < \mu_S\ \underline{8}$	H_1: $\mu_C\ \overline{9} > \mu_C\ \underline{8}$

E. The following hypotheses are concerned with branch of military servie:

HS 5: Officers in the Navy Department (Marines, Navy) are more structured than their counterparts in the other services.

HC 5: Officers in the Navy Department (Marines, Navy) are less considerate than their counterparts in the other services.

Branch of servide (structure)	Branch of service (consideration)
HS 5	HC 5
H_o: μ_S nav $\leq \mu_S$ other	H_o: μ_C nav $> \mu_C$ other
H_1: μ_S nav $> \mu_S$ other	H_1: μ_C nav $< \mu_C$ other

The Marine Corps and Naval officers were combined for comparison because much of their training (commissioning, designator, etc.) influence, as well as policy and procedures, are identical.

F. The hypotheses dealing with designator (primary warfare specialty) are:

HS 6: Line officers are more structured than staff officers.

HC 6: Line officers are less considerate than their staff counterparts.

Designator (structure)	Designator (consideration)
HS 6	HC 6
H_o: μ_S line $\leq \mu_S$ staff	H_o: μ_C line $\geq \mu_C$ staff
H_1: μ_S line $> \mu_S$ staff	H_1: μ_C line $< \mu_C$ staff

G. The three categories of curriculum input will be delineated in the following chapter. The hypotheses dealing with curriculum are:

HS 7: Students in non-technical graduate curriculum ($\underline{t}$) are less structured than students in more technical ($\overline{t}$) areas of study.

HC 7: Students in non-technical graduate curriculum ($\underline{t}$) are more considerate than their more technical ($\overline{t}$) schoolmates.

Curriculum (structure)	Curriculum (consideration)
HS 7	HC 7
H_o: $\mu_S\ \underline{t} \geq \mu_S\ \overline{t}$	H_o: $\mu_C\ \underline{t} \leq \mu_C\ \overline{t}$
H_1: $\mu_S\ \underline{t} < \mu_S\ \overline{t}$	H_1: $\mu_C\ \underline{t} > \mu_C\ \overline{t}$

H. Concerning birth order, the hypotheses are:

HS 8: First born (fb) children would be less structured than their siblings.

HC 8: First born (fb) children would be more considerate than their siblings.

Birth order (structure)	Birth order (consideration)
HS 8	HC 8
H_o: μ_S fb $\geq \mu_S$ other	H_o: μ_C fb $\leq \mu_C$ other
H_1: μ_S fb $< \mu_S$ other	H_1: μ_C fb $> \mu_C$ other

I. The hypotheses concerning military versus civilian samples expected to be confirmed are:

HS 9: Military officers (mil) are less structured than their civilian counterparts (civ).

HC 9: Military officers (mil) are more considerate than their civilian counterparts (civ).

Mil vs Civ (structure)	Mil vs Civ (consideration)
HS 9	HC 9
H_o: μ_S mil $\geq \mu_S$ civ	H_o: μ_C mil $\leq \mu_C$ civ
H_1: μ_S mil $< \mu_S$ civ	H_1: μ_C mil $> \mu_C$ civ

J. Because of the relatively large representation from each of the services, it was felt that it would be of interest also to put forward the following hypotheses for each of the individual services represented:

Navy (nav) - Civilians

HS 10

H_o: $\mu_{S\ nav} \geq \mu_{S\ civ}$

H_1: $\mu_{S\ nav} < \mu_{S\ civ}$

HC 10

H_o: $\mu_{C\ nav} \leq \mu_{C\ civ}$

H_1: $\mu_{C\ nav} > \mu_{C\ civ}$

Army-Civilians

HS 11

H_o: $\mu_{S\ army} \geq \mu_{S\ civ}$

H_1: $\mu_{S\ army} < \mu_{S\ civ}$

HC 11

H_o: $\mu_{C\ army} \leq \mu_{C\ civ}$

H_1: $\mu_{C\ army} > \mu_{C\ civ}$

Marine Corps (m.c.) - Civilians

HS 12

H_o: $\mu_{S\ m.c.} \geq \mu_{S\ civ}$

H_1: $\mu_{S\ m.c.} < \mu_{S\ civ}$

HC 12

H_o: $\mu_{C\ m.c.} \leq \mu_{C\ civ}$

H_1: $\mu_{C\ m.c.} > \mu_{C\ civ}$

Coast Guard (c.g.) - Civilians

HS 13

H_o: $\mu_{S\ c.g.} \geq \mu_{S\ civ}$

H_1: $\mu_{S\ c.g.} < \mu_{S\ civ}$

HC 13

H_o: $\mu_{C\ c.g.} \leq \mu_{C\ civ}$

H_1: $\mu_{C\ c.g.} > \mu_{C\ civ}$

Air Force (a.f.) - Civilians

HS 14

H_o: $\mu_{S\ a.f.} \geq \mu_{S\ civ}$

H_1: $\mu_{S\ a.f.} < \mu_{S\ civ}$

HC 14

H_o: $\mu_{C\ a.f.} \leq \mu_{C\ civ}$

H_1: $\mu_{C\ a.f.} > \mu_{C\ civ}$

II. METHODOLOGY

A. THE SAMPLE

For the purpose of comparing the dimensions of the structure and the consideration of the military and civilian sample, a leadership styles inventory, the Leadership Opinion Questionnaire (LOQ) was utilized in this study. It was mailed to the U.S. military student population at the Naval Postgraduate School, and the responses provided measures of structure and consideration. The military sample also provided an opportunity to analyze the impact of several key demographic variables on the level of structure and consideration among the officers. The survey itself is presented in Appendix A.

Demographically, the sample can be described as follows:

Age: The variable of age distribution drawn from the sample is presented in Table II-1 and Figure II-1 and is representative of the universe of students at the Naval Postgraduate School.

Rank: The variable of rank is represented in Table II-2 and Figure II-2. Ninety-four percent of the officers responding are Lieutenants, Captains, Lieutenant Commanders and Majors, thus providing the representation of middle grade officers desired for the sample.

Commissioning Source: The data drawn concerning this variable is presented in Table II-3. The following are the meanings of the abbreviations used for the values on this variable.

TABLE II-1

AGE DISTRIBUTION

Age	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)	Cum. Frequency (%)
25	3	0.7	0.7	0.7
26	25	6.2	6.2	6.9
27	38	9.4	9.4	16.3
28	48	11.9	11.9	28.1
29	23	5.7	5.7	33.8
30	29	7.2	7.2	41.0
31	46	11.4	11.4	52.3
32	65	16.0	16.0	68.4
33	44	10.9	10.9	79.3
34	20	4.9	4.9	84.2
35	29	7.2	7.2	91.4
36	16	4.0	4.0	95.3
37	10	2.5	2.5	97.8
38	2	0.5	0.5	98.3
39	3	0.7	0.7	99.0
40	3	0.7	0.7	99.8
44	1	0.2	0.2	100.0
TOTAL	405	100.0	100.0	

Mean	31.081	Skewness	0.354
Mode	32.000	Maximum	44.000
Kurtosis	-0.057	Median	31.293
Minimum	25.000	Variance	10.491
Std. Err.	0.161	Range	19.000
Std. Dev.	3.239		

Valid Cases 405 Missing Cases 0

FIGURE II-1

AGE HISTOGRAM

```
     I
25.  ***  (3)
     I
26.  **************  (25)
     I
27.  ********************  (38)
     I
28.  *************************  (48)
     I
29.  *************  (23)
     I
30.  ****************  (29)
     I
31.  ************************  (46)
     I
32.  ***********************************  (65)
     I
33.  ************************  (44)
     I
34.  ***********  (20)
     I
35.  ****************  (29)
     I
36.  *********  (16)
     I
37.  ******  (10)
     I
38.  **  (2)
     I
39.  ***  (3)
     I
40.  ***  (3)
     I
44.  **  (1)
     I
     I
     I.........I.........I.........I.........I.........I
     0         20        40        60        80        100
     FREQUENCY
```

TABLE II-2

RANK DISTRIBUTION

	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)	Cum Frequency (%)
First Lt or LTjg (02)	19	4.7	4.7	4.7
Capt or Lt (03)	275	67.9	67.9	72.6
Maj or LCDR (04)	107	26.4	26.4	99.0
Cdr or LtCol (05)	4	1.0	1.0	100.0
TOTAL	405	100.0	100.0	

Mean	3.237	Skewness	0.462
Mode	3.000	Maximum	5.000
Kurtosis	0.445	Median	3.167
Minimum	2.000	Variance	0.295
Std Err	0.027	Range	3.000
Std Dev	0.543		

Valid Cases 405 Missing Cases 0

FIGURE II-2

RANK HISTOGRAM

```
I
***  (19)   [FIRST LT OR LTJG]
I
******************************  (275) [CAPT OR LT]
I
************  (107)  [MAJ OR LCDR]
I
*  (4)   [CDR OR LTCOL]
I.........I.........I.........I.........I.........I
0        100       200       300       400       500
FREQUENCY
```

TABLE II-3

COMMISSIONING DISTRIBUTION

Category Label	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)	Cum Frequency (%)
USNA	87	21.5	21.5	21.5
NOCS	105	25.9	25.9	47.4
NROTC	63	15.6	15.6	63.0
MCOCS	22	5.4	5.4	68.4
USMA	12	3.0	3.0	71.4
ROTC	23	5.7	5.7	77.0
USAFA	4	1.0	1.0	78.0
AFROTC	6	1.5	1.5	79.5
AFOCS	3	0.7	0.7	80.2
C G OCS	6	1.5	1.5	81.7
C G ACAD	12	3.0	3.0	84.7
DIR COMM	10	2.5	2.5	87.2
USMMA	1	0.2	0.2	87.4
ARMY OCS	10	2.5	2.5	89.9
NESEP	41	10.1	10.1	100.0
TOTAL	405	100.0	100.0	

CATEGORY		
1	USNA-	United States Naval Academy
2	NOCS-	Navy Officer Candidate School
3	NROTC-	Navy Reserve Officer Training Command
4	MCOCS-	Marine Corp Officer Candidate School
5	USMA-	United States Military Academy
6	ROTC-	Reserve Officer Training Command (Army)
7	USAFA-	United States Air Force Academy
8	AFROTC-	Air Force Reserve Officer Training Command
9	AFOCS-	Air Force Officer Candidate School
10	CGOCS-	Coast Guard Officer Candidate School
11	CGACAD	Coast Guard Academy
12	Dir Comm-	Direct Commission (without formal officer training)
13	USMMA-	U.S. Merchant Marine Academy
14	Army OCS-	Army Officer Candidate School
15	NESEP-	Navy Enlisted Scientific Education Program - this program chose promising enlisted personnel for college education in the science fields to fill a need for technical proficiency in the Navy officer corp - it was discontinued in 1975

Sample categories were eliminated if they contained fewer than ten officers.

Years Commissioned Service: Data for this variable and its distribution are presented in Table II-4 and Figure II-3. This data seems to represent the distribution on this variable for middle managers.

Branch of Service: The distribution of this variable is presented in Table II-5 and Figure II-4. There is a

Table II-4

Years Commissioned Service Distribution

Yr	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)	Cum Frequency (%)
3	2	0.5	0.5	0.5
4	34	8.4	8.4	8.9
5	73	18.0	18.0	26.9
6	50	12.3	12.3	39.3
7	36	8.9	8.9	48.1
8	31	7.7	7.7	55.8
9	50	12.3	12.3	68.1
10	50	12.3	12.3	80.5
11	34	8.4	8.4	88.9
12	18	4.4	4.4	93.3
13	15	3.7	3.7	97.0
14	6	1.5	1.5	98.5
15	2	0.5	0.5	99.0
16	3	0.7	0.7	99.8
18	1	0.2	0.2	100.0
TOTAL	405	100.0	100.0	

Mean	7.956	Skewness	0.479
Mode	5.000	Maximum	18.000
Kurtosis	-0.407	Median	7.742
Minimum	3.000	Variance	8.192
Std Err	0.142	Range	15.000
Std Dev	2.863		

Valid Cases 405 Missing Cases 0

FIGURE II-3

Years Commissioned Service Histogram

```
YR
    I
 3  **  (2)
    I
 4  ******************  (34)
    I
 5  ****************************************  (73)
    I
 6  **************************  (50)
    I
 7  *******************  (36)
    I
 8  *****************  (31)
    I
 9  **************************  (50)
    I
10  **************************  (50)
    I
11  ******************  (34)
    I
12  **********  (18)
    I
13  *********  (15)
    I
14  ****  (6)
    I
15  **  (2)
    I
16  ***  (3)
    I
18  **  (1)
    I
    I.........I.........I.........I.........I.........I
    0         20        40        60        80        100
    FREQUENCY
```

Table II-5

Branch of Service Distribution

Category Label	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)	Cum Frequency (%)
Navy	297	73.3	73.3	73.3
Army	41	10.1	10.1	83.5
C.G.	19	4.7	4.7	88.1
M.C.	35	8.6	8.6	96.8
A.F.	13	3.2	3.2	100.0
Total	405	100.0	100.0	

Figure II-4

Branch of Service Histogram

```
I
********************************  (297)  [NAVY]
I
*****  (41)   [ARMY]
I
***  (19)    [C.G.]
I
*****  (35)   [M.C.]
I
**  (13)   [A.F.]
I
I.........I.........I.........I.........I.........I
0        100       200       300       400       500
FREQUENCY
```

preponderance of representation by the Navy which is understandable considering the sample is drawn from the Naval Postgraduate school. The representation of the other services is almost identical to their representation in the school.

Designators: The distribution of designators (primary warfare specialty) was probably the most difficult variable to deal with. There were seventy three (73) different designators represented across the five services. The only designators whose sample sizes were large enough to approach a normal sampling distribution are represented as follows:

Desig	Title	Absolute Freq	Relative Freq (PCT)
1110	Surface Warfare Off.	103	25.4
1310	Aviation Warfare Off. (Pilot)	36	8.9
1320	Aviation Warfare Off. (NFO)	34	8.4
1460	Engineer Duty Off.	28	6.9
3100	Supply Corp. Off.	27	6.7
5100	Civil Engineer Corp. Off.	10	2.5
	TOTAL	238	58.8%
67 Different Designators	OTHER	167	41.2%

All of the members of these designators are Naval Officers. The first three categories (1110, 1310, 1320) are considered unrestricted line officers which means they are all capable of succeeding to command at sea. The last three categories are restricted or staff corp officers who do not meet the criteria of command at sea capability. It may be helpful to define the roles of these officers within the Navy:

1110-SWO- associated with ships

1310-AWO- actual pilots

1320-AWO (NFO)- Naval Flight Officer, function as navigator, bombardier on aircraft

1460-EDO- responsible for technical and maintenance support

3100-Supply Officer- logistics support

5100-CECO- responsible for building and maintenance of shore based facilities

The means for Structure and Consideration for each of these categories will be presented for comparison, as well as the mean scores on the LOQ for the staff corp officers and the unrestricted line community.

Curriculum: The distribution of curriculum inputs is represented in Table II-6 and Figure II-5. A list of what curricula fall under each category is presented in Table II-7. The decision as to what category each curriculum fell into was based predominently on the presence or absence of core courses in each curriculum that were science (physics and chemistry) or mathematics oreinted. In several instances the opinion of the curricular officer was requested in addition to the Academic Proficiency code requirements.

Birth Order: The data for this variable is reported in Table II-8 and Figure II-6. There is a majority (61%) of first born individuals in the population, which is interesting particularly when one considers that first borns make up only one-third of the general population (Murphy and Dooley, 1974). The oldest child has been repeatedly found to be a conformist and according to Kammeyer (1966), has the responsibility for bearing the family position

Table II-6

Curriculum Distribution

	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)	Cum Frequency (%)
Extremely Tech	149	36.8	36.8	36.8
Somewhat Tech	110	27.2	27.2	64.0
Non-Tech	146	36.0	36.0	100.0
Total	405	100.0	100.0	

Mean	1.993	Skewness	0.014
Mode	1.000	Maximum	3.000
Kurtosis	-1.632	Median	1.986
Minimum	1.000	Variance	0.730
Std Err	0.042	Range	2.000
Std Dev	0.854		

Valid Cases 405 Missing Cases 0

Figure II-5

Curriculum Histogram

```
I
****************************************  (149)
I                            [Extremely Tech]
I
*****************************  (110)
I                            [Somewhat Tech]
I
****************************************  (146)
I                            [Non Tech]
I........I.........I.........I.........I.........I
0        40        80       120       160       200
Frequency
```

Table II-7

Curriculum Breakdown

EXTREMELY TECHNICAL: COURSE NAME	Engineering-Math-Science	COURSE NUMBER
Air Ocean Science		373
Meteorology		372
Antisubmarine Warfare		525
Weapons Systems Technology		530
Weapons Systems Science		531
Underwater Acoustics		535
Naval Engineering		570
Engineering Electronics		590
Electronic Warfare Engineering		591
Electronic Warfare System Tech.		595
Aeronautical Engineering		510
Aeronautical Engineering Aironics		611
SOMEWHAT TECHNICAL:	Applied Math/Science	
Operations Research/Systems Analysis		360
Computer Systems		367
Computer Science		368
Command Control Communications		365
Oceanography		440
Communications Engineering		600
Telecommunications Systems		620
NON TECHNICAL:		
Systems Acquisition Management		816
National Security Affairs		681-82-83-84-86
Administrative Science		813-15-17-19-27-37-47-57
Naval Intelligence		825

Table II-8

Birth Order Distribution

Order	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)	Cum Frequency (%)
1	247	61.0	61.0	61.0
2	109	26.9	26.9	87.9
3	34	8.4	8.4	96.3
4	10	2.5	2.5	98.8
5	3	0.7	0.7	99.5
7	2	0.5	0.5	100.0
Total	405	100.0	100.0	

Figure II-6

Birth Order Histogram

```
ORDER
        I
   1    **************************  (247)
        I
        I
   2    ************  (109)
        I
        I
   3    ****  (34)
        I
        I
   4    **  (10)
        I
        I
   5    **  (3)
        I
        I
   7    **  (2)
        I.........I.........I.........I.........I........I
        0        100       200       300       400      500
        FREQUENCY
```

and values, and are the "conservators of traditional culture." This would seem to explain the abundance of representation by first born children in the traditional/conservative role of military officer. In the previously cited Dooley and Murphy study, it was found that 55.6% of their sample (n = 459) of military officers were first born.

Structure and Consideration: The distribution for the entire sample on these variables are presented in Table II-9 and Figure II-7 (structure) and Table II-10 and Figure II-8 (consideration).

B. THE INSTRUMENT

An important and questioned result of research findings is that the dimensions of structure and consideration are independent of one another. One very popular management training program, The Managerial Grid (Blake and Mouton) is based upon the assumed independence of Task (structure) and Social (consideration) leadership roles. E.A. Fleishman contends in the manual for the LOQ that the median for the correlation between structure and consideration is around zero and thus the factors are independent, and also that the "halo and socail desirability tendencies, common biases in instruments of this kind, do not seem to be operating in these scales" (Fleishman, 1969). The appearance of several sizable positive correlations in the literature have led several authors (Bales, 1958; Fiedler, 1964; Weisenburg, 1965) to seriously question the generality of the assumed independence of these two leadership dimensions.

Table II-9

Distribution For Structure

Score	Absolute Freq	Relative Freq (Pct)	Adjusted Freq (Pct)	Cum Freq (Pct)
33.	5	1.2	1.2	1.2
34.	1	0.2	0.2	1.5
35.	4	1.0	1.0	2.5
36.	7	1.7	1.7	4.2
37.	5	1.2	1.2	5.4
38.	8	2.0	2.0	7.4
39.	8	2.0	2.0	9.4
40.	26	6.4	6.4	15.8
41.	13	3.2	3.2	19.0
42.	10	2.5	2.5	21.5
43.	17	4.2	4.2	25.7
44.	19	4.7	4.7	30.4
45.	21	5.2	5.2	35.6
46.	23	5.7	5.7	41.2
47.	20	4.9	4.9	46.2
48.	25	6.2	6.2	52.3
49.	18	4.4	4.4	56.8
50.	22	5.4	5.4	62.2
51.	18	4.4	4.4	66.7
52.	18	4.4	4.4	71.1
53.	24	5.9	5.9	77.0
54.	17	4.2	4.2	81.2
55.	16	4.0	4.0	85.2
56.	8	2.0	2.0	87.2
57.	8	2.0	2.0	89.1
58.	11	2.7	2.7	91.9
59.	6	1.5	1.5	93.3
60.	8	2.0	2.0	95.3
61.	3	0.7	0.7	96.0
62.	6	1.5	1.5	97.5
63.	3	0.7	0.7	98.3
64.	2	0.5	0.5	98.8
65.	3	0.7	0.7	99.5
69.	1	0.2	0.2	99.8
74.	1	0.2	0.2	100.0
TOTAL	405	100.0	100.0	

Figure II-7

Structure Histogram

```
SCORE
  33 ******  (5)
  34 **  (1)
  35 *****  (4)
  36 ********  (7)
  37 ******  (5)
  38 *********  (8)
  39 *********  (8)
  40 ****************************  (26)
  41 **************  (13)
  42 ***********  (10)
  43 ******************  (17)
  44 ********************  (19)
  45 **********************  (21)
  46 ************************  (23)
  47 **********************  (20)
  48 ***************************  (25)
  49 ******************  (18)
  50 ************************  (22)
  51 ******************  (18)
  52 ******************  (18)
  53 **************************  (24)
  54 ******************  (17)
  55 *****************  (16)
  56 *********  (8)
  57 *********  (8)
  58 ************  (11)
  59 *******  (6)
  60 *********  (8)
  61 ****  (3)
  62 *******  (6)
  63 ****  (3)
  64 ***  (2)
  65 ****  (3)
  69 **  (1)
  74 **  (1)
```

Mean	48.363	Skewness	0.229
Mode	40.000	Maximum	74.000
Kurtosis	-0.126	Median	48.120
Minimum	33.000	Variance	50.098
Std Err	0.352	Range	41.000
Std Dev	7.078		

Valid Cases 405 Missing Cases 0

Table II-10

Distribution for Consideration

Score	Absolute Freq	Relative Freq (Pct)	Adjusted Freq (Pct)	Cum Freq (Pct)
33.	1	0.2	0.2	0.2
34.	1	0.2	0.2	0.5
37.	1	0.2	0.2	0.7
39.	3	0.7	0.7	1.5
40.	7	1.7	1.7	3.2
41.	6	1.5	1.5	4.7
42.	9	2.2	2.2	6.9
43.	10	2.5	2.5	9.4
44.	12	3.0	3.0	12.3
45.	14	3.5	3.5	15.8
46.	22	5.4	5.4	21.2
47.	21	5.2	5.2	26.4
48.	27	6.7	6.7	33.1
49.	24	5.9	5.9	39.0
50.	24	5.9	5.9	44.9
51.	27	6.7	6.7	51.6
52.	27	6.7	6.7	58.3
53.	29	7.2	7.2	65.4
54.	21	5.2	5.2	70.6
55.	16	4.0	4.0	74.6
56.	25	6.2	6.2	80.7
57.	14	3.5	3.5	84.2
58.	10	2.5	2.5	86.7
59.	15	3.7	3.7	90.4
60.	10	2.5	2.5	92.8
61.	8	2.0	2.0	94.8
62.	6	1.5	1.5	96.3
63.	4	1.0	1.0	97.3
64.	2	0.5	0.5	97.8
65.	2	0.5	0.5	98.3
67.	2	0.5	0.5	98.8
68.	4	1.0	1.0	99.8
69.	1	0.2	0.2	100.0
TOTAL	405	100.0	100.0	

Figure II-8

Consideration Histogram

```
SCORE
  33 **  (1)
  34 **  (1)
  37 **  (1)
  39 ****  (3)
  40 ********  (7)
  41 *******  (6)
  42 **********  (9)
  43 ***********  (10)
  44 *************  (12)
  45 ***************  (14)
  46 ************************  (22)
  47 **********************  (21)
  48 ****************************  (27)
  49 **********************  (24)
  50 **********************  (24)
  51 ****************************  (27)
  52 ****************************  (27)
  53 ******************************  (29)
  54 **********************  (21)
  55 *****************  (16)
  56 **************************  (25)
  57 ***************  (14)
  58 ***********  (10)
  59 ****************  (15)
  60 ***********  (10)
  61 *********  (8)
  62 *******  (6)
  63 *****  (4)
  64 ***  (2)
  65 ***  (2)
  67 ***  (2)
  68 ****  (4)
  69 **  (1)
```

Mean	51.417	Skewness	0.174
Mode	53.000	Maximum	69.000
Kurtosis	0.066	Median	51.259
Minimum	33.000	Variance	37.447
Std Err	0.304	Range	36.000
Std Dev	6.119		

Valid Cases 405 Missing Cases 0

In a study conducted by Weisenburg and Kavanaugh (1972), it was found that "when leaders described their attitudes about how they should behave (as in the LOQ) the dimensions of consideration and structure were empirically independent in 67% of the cases." Corroborating this finding was the analysis conducted in this research. In a t-test between the means of the two variables, a correlation of .154 and a significance level of .000 was found. Thus, at least in this sample, the evidence supported Fleishman's contention that the factors are independent.

It is felt that a common failing of instruments in this area is their high correlation with verbal intelligence. The correlations of the scales of the LOQ with twelve different intelligence test measures are presented in the manual for the LOQ. There is no indication from this data that scores on these leadership dimensions are dependent on intelligence or verbal ability (Fleishman, 1969).

Greenwood and McNamara (1969) supported this contention, stating "results generally support Fleishman's reported data that the two dimensions of the LOQ are unique measures of individual behavior and ability." Results were reported to be unrelated to scores for tests measuring intelligence, interest, or personality.

Weisenburg and Gruenfield (1969) have criticized the LOQ from the standpoint that they felt, "there are those that fake consideration although they lack genuine empathy for

others. The LOQ is highly transparent and susceptible to faking, ... and responses of individuals to it do not generate too much confidence unless it is given anonymously." It is for this reason that the questionnaire was given anonymously in this research. It is granted that the LOQ instrument suffers from many of the shortcomings that are usually associated with pencil-and-paper tests. There is no doubt that the statements which respondents on the LOQ measure are required to endorse or reject have a lot of surplus meaning. The "correct" answers are fairly apparent depending on the stance the respondent wants to take. However, since the test was administered anonymously and not in a job/position threatening scenario, it is hoped that the responses would be more valid.

Having overcome the perceived shortcomings of the LOQ, it was determined to be the most valid instrument to utilize in continuing this research.

C. SURVEY METHOD

1. Reason for Choice of the Sample

This thesis focuses upon a sample of four hundred and five (405) successful, career oriented military officers enrolled at the Naval Postgraduate School. These officers are designated "successful" because they were chosen for graduate education at the government's expense, as a result of successfully competing with their fellow officers in a keen selection process. Excellent performance in their military

as well as their academic background was the basis for their selection. They are career oriented by virtue of their middle-grade rank and the fact that, by execution of their orders to the Naval Postgraduate School, they have obligated themselves for a minimum of three more years of duty in their respective services.

2. Data Collection

Initially the questionnaire was administered to a pilot study sample of thirty-four (34) students enrolled in Prof. John Senger's course "Leadership and Group Behavior," MN 3121. The recommendations and suggestions as well as the data received from this group were incorporated into the survey and the preparation for this thesis.

Upon completion of printing, the questionnaires were placed in the individual mail boxes of each military student attending the Naval Postgraduate School as of June 4, 1979. The limitations of a mailed survey were recognized. Besides the risk of self-selection and bias due largely to non-response, there were also limitations imposed by the inability to insure that all the questions would be completely understood and answered.

To attempt to increase the response rate and generate a semblance of initial interest on the part of the recipient, the "Skull and Crossbones" cover sheet was adopted (see Appendix A). According to Stanley Payne in The Art of Asking Questions, "the expected return rate of mailed questionnaires is less than ten percent." Mr. Payne goes on to point out, "one

of the best ways to increase your response rate/return of mailed questionnaires, is to catch the reader's attention with an appealing or interesting cover sheet." I mailed eight hundred and eighty two (882) surveys and five weeks later, on July 16, when I ceased collecting responses, I had four hundred and sixty-three (463) returns (52.4%). Fifty eight (58) of the returns were deleted from analysis because of incomplete responses, leaving a sample of four hundred and five (405). I think the return rate was indicative of the success of the cover sheet.

There were no changes made to the format of the standard LOQ, other then the addition of the ten demographic questions. An attempt was made to get copies of the self-grading questionnaire which is copywrited and printed by Science Research Associates, Inc. The request for assistance from that company was denied, although permission was granted to use the basic questionnaire. Without the self-grading capability, it is an extremely time consuming and tedious job to grade each respondent.

Originally, the survey was mailed to the community of international military officers (pop. 202) at the Naval Postgraduate School, but their response rate was minimal (6%) and therefore it was decided to ignore their inputs and concentrate solely on U.S. military officers.

III. FINDINGS

A. ANALYSIS OF DATA

Upon completion of the data-gathering phase of this study, each questionnaire was graded for the variables of consideration and structure and the results along with the demographic factors were placed on a computer card for each individual. A general frequency distribution program was then run to determine the basic statistical data. And then, with the assistance of the Statistical Package for the Social Sciences (SPSS) the mean scores for consideration and structure were compared using the one-tailed t-test for two independent groupings.

To deal with the factor of occupation (military vs civilian), the same procedure was used with the exception that the calculations were conducted by hand because the SPSS program was unable to deal with the data for civilian managers in its present form.

It should be pointed out that a frequency analysis was performed on the two samples individually prior to their being compared by the t-test, to insure that the sample mean measurements on each of the demographic factors <u>not</u> being tested remained within one half a standard deviation of the overall mean for that factor. This was an attempt to insure that the procedure was in fact measuring the impact of only the background factor in question, and that the other demographics did not impact upon the t-test results. In only one case

did this confounding condition occur, and it is indicated in the discussion section.

Basically the goal of conducting a t-test is to establish whether or not a difference between two samples is significant. The term significant is used here to mean "indicating" or "signifying" a true difference between the two populations being compared (Nie et al., 1970). In an attempt to discriminate results, the difference between means for the scores of the LOQ were considered significant if the one-tailed probability of occurrence was less than .05 for the demographic factors tested, and less than .10 for the occupational comparison.

B. RESULTS OF COMPARISON

The purpose of this section is to present the results of the hypotheses described in Chapter 1, Section B. The results will be reported in two phases, the first dealing with the impact of the demographic factors and the second reporting the findings based on comparison between the military population sampled and their civilian counterparts.

1. The Effect of Demographic Factors

The following hypotheses were supported by the results of the t-tests. The actual t-test computations are presented in Appendix B.

A. Age: Officers over the age of 32 are less structured ($p < .035$) and more considerate ($p < .0325$) than their younger associates (HS 1, HC 1; Appendix B, Table 1).

B. Rank: Officers 04 and above (LtCdr and Major) are less structured ($p < .0425$) than their lower ranking brethren (HS 2; Appendix B, Table 2).

C. Commissioning Source: Concerning this variable it was felt to be of interest to present the results for each of the categories:

COMM. SOURCE	STRUCTURE	CONSIDERATION
USNA (N = 87)	49.920	50.644
NOCS (N = 105)	47.352	52.552
NROTC (N = 63)	48.048	50.857
MCOCS (N = 22)	49.455	51.091
USMA (N = 12)	49.083	49.971
ROTC (N = 23)	*52.478	51.931
C.G. ACAD. (N = 12)	+43.75	52.917*
NESEP (N = 41)	48.537	49.341+
DIR COMM (N = 10)	44.4	52.2

* Indicates Highest Score
\+ Indicates Lowest Score

When sources are combined into commissioning groups, we find the following:

COMM. SOURCE	STRUCTURE	CONSIDERATION
ACADEMY (N = 116)	*49.181	50.931+
ROTC (N = 92)	48.913	51.272
OCS (N = 136)	+47.757	52.368*

It was found that Academy graduates are more structured ($p < .0385$) than their OCS counterparts although <u>not</u> significantly less considerate ($p < .0695$) (HS 3, HC 3; Appendix B, Table 3).

D. Years Commissioned Service: Officers with 9 years of service are more considerate ($p < .008$) than their less experienced associates (HC 4; Appendix B, Table 4).

E. Branch of Service: Each of the branches of military service were fairly well represented, and therefore it was

felt of interest to represent each of their means at this stage simply for comparison:

BRANCH	STRUCTURE	CONSIDERATION
USN (N = 297)	48.215	51.273
USA (N = 41)	*50.756	52.610
USMC (N = 35)	50.171	50.086+
USCG (N = 19)	+44.421	52.526
USAF (N = 13)	45.077	52.923*

It was found that Navy and Marine Corps officers (Navy Department) are less considerate ($p < .028$) than their counterparts in the other services (HC 5; Appendix B, Table 5).

F. Designator: This variable has also been broken down by the major individual communities represented for the interest of the reader:

DESIGNATOR	STRUCTURE	CONSIDERATION
1110 (N = 103)	*50.282	50.241*
1310 (N = 36)	46.556	52.056
1320 (N = 34)	48.353	53.324
1460 (N = 28)	47.179	50.250
3100 (N = 27)	+46.080	51.480
5100 (N = 10)	46.600	53.600*

It is interesting to note that the Surface Warfare Community (of which the author is a member) are both the most structured and the least considerate of the six groups represented. The comparison indicates that line officers (1110, 1310, 1320) are more structured ($p < .006$) than their staff counterparts (HS 6; Appendix B, Table 6).

G. Curriculum: The three curriculum categories are presented below. It is interesting to note that non-technical curricula have the lowest structure and the highest consideration, although the t-test shows that non-technical curricula

are significantly more considerate only ($p < .0065$) (HC 7; Appendix B, Table 7).

CURRICULUM CAT.	STRUCTURE	CONSIDERATION
Extremely tech.	48.584	51.027
Somewhat tech.	*48.664	50.609+
Non-technical	+47.911	52.425*

H. Birth Order: First-born children were found to be less structured ($p < .007$) than their later-born siblings (HS 8; Appendix B, Table 8).

2. Comparison of Civilian and Military Samples

The computations for the t-test of each hypothesis are presented in Appendix C. The following hypotheses were supported by the data:

A. Military officers in general are less structured ($t = -1.5435$) and less considerate ($t = -.752$) than their civilian counterparts (HS 9, HC 9; Appendix C).

B. Navy officers are less structured ($t = -1.616$) and less considerate ($t = -.8687$) than the civilian middle managers they were compared with (HS 10, HC 10; Appendix C).

C. Army officers are at least as structured ($t = .5378$) and less considerate ($t = .3360$) than their civilian counterparts (HS 11, HC 11; Appendix C).

D. Marine officers are as structured ($t = .2252$) as the civilians they were compared with and less considerate ($t = -.9710$) (HS 12, HC 12; Appendix C).

E. Coast Guard officers are less structured ($t = -1.902$) and less considerate ($t = .2045$) than their counterparts in the civilian community (HS 13, HC 13; Appendix C).

F. Air Force officers are less structured ($t = -1.391$) and less considerate ($t = .299$) than their civilian counterparts (HS 14, HC 14; Appendix C).

C. THE INFLUENCE OF DEMOGRAPHIC FACTORS

A factor analysis of the data was conducted to determine which of the demographic factors had the strongest influence on the variables of structure and consideration. It was found that 62.3% of the variance of the two scores measured was based solely on the difference in age. It should logically follow that the difference found to exist between scores based on age would realistically drive the differences found to exist for rank and years of commissioned service. This is because as one progresses in age he normally would progress in rank and necessarily in years of commissioned service.

It appears obvious from these results that as one gets older (i.e., more senior, more time in commissioned service) his score on structure goes down while his consideration level rises.

IV. DISCUSSION

A. REFLECTIONS ON THE IMPACT OF DEMOGRAPHIC FACTORS

Prior to this study, little data existed concerning normative ranges on the dimensions of structure and consideration for officers in general and Naval officers in particular. Fleishman (1969) reported LOQ data for a sample of 274 Naval Officer Candidates, which is presented below for comparison with the two age groups utilized in this study:

	Structure	Consideration
Officer Candidates	55.4	44.2
Officers aged 32 and below	48.9717	50.8821
Officers aged 33 and above	47.6943	52.0052

There seems to be a definitive trend, that is, as one gets older, more senior, more experienced, consideration becomes higher and structure scores begin to diminish. Kaplan (1979) reported the same phenomenon when he compared the means of these same officer candidates with his sample of twenty commanding officers and twenty executive officers on the dimensions of the LOQ. As the samples that Kaplan compared progressed up the ladder of position from officer candidates to executive officer to commanding officer, scores for structure began to go down and those for consideration began to rise.

An explanation of these findings, that the leadership style of officers tend to become more socially oriented and less task oriented as they become more senior (older), may

be the officer's adaptation to the situation in which he finds himself. In the younger years, lower ranks, the officer is forced to "make a name for himself." He is just starting a career and he quickly comes to the realization that getting the job done is the best way to succeed. As he progresses up the chain of age/position, he discovers that if one is to succeed he must pay attention to social/emotional issues as well as task accomplishment, and he adapts his leadership style to reflect this realization.

Stanton (1960) has reported that in "authoritarian" companies a positive relationship was found between length of service and supervisors attitude concerning showing consideration toward their employees. He suggests that a possible explanation is "that supervisors in the authoritarian company adopt with passing of time a more benevolent and paternal attitude toward their subordinates" (Stanton, 1960).

On the other hand, Kaplan (1979) makes a case for the premise that leadership style is relatively constant and enduring over time, and that changes in the mean values for these leadership dimensions may be attributable to changes in the population of officers at each career period, rather than changes in leadership behavior. The military's promotion and screening process as well as civilian hiring and firing practices may filter out those individuals high in structure and low in consideration.

Whatever the reason for the phenomenon, it remains distinct. Older, more senior, higher ranking officers are more considerate and less structured than their associates. It would be intriguing to see if this trend holds true at even more senior ranks, older officers than were contained in our sample. I venture to say it would. As more senior officers (Commanders and Captains) enter the political arena, they are either already socially aware or they would necessarily adopt a more social/considerate leadership style or perish. The results of a longitudinal study of military officers to include executive level managers would be of interest.

The impact of the other demographic data is less obvious. The influence of commissioning source, e.g., that academy graduates were more structured than OCS graduates, was not surprising when one considers the anecdotal evidence of strict regimentation and task emphasis placed on students at the various academies. Persons commissioned through the OCS system typically tend to have minimal association with the military prior to their exposure at OCS, and therefore would tend to be less structured, as the sample has indicated.

The impact of branch of service was particularly disconcerting to this author. The comparison seems to indicate that Navy/Marine officers are less considerate than their military brethren in other services. As a Naval officer, the investigator found this disturbing and contrary to what was expected to be found. It seems to indicate that the Navy department in its training and policy does not encourage

consideration among its officer corps. This problem and possible solution will be discussed further in a subsequent chapter.

From the standpoint of designator, the driving force behind the level of structure among line officers was not the warfare specialty chosen but would appear to be the initial source of entry into the commissioned ranks. The sample of staff officers were predominantly (92.34%) OCS/NROTC graduates, while the sample of line officers were academy inputs (61.3%). This finding would seem to reflect officer commissioning source more than warfare specialty.

It was expected that the effect of curriculum would be somewhat different. It was conjectured that technical education would necessitate a more structured bent. That is in fact the case, although not at a significant level. It seems plausible that those individuals in the non-technical curricula would be more considerate. They are in "social science" fields versus "pure science" courses and would therefore tend to reflect the influence of their education and self selection into these curricula.

The impact of birth order came as a complete surprise. It was expected that first-born children would be more structured than their siblings, purely as a reflection of what appears to be their conservative and traditional nature. It would be pure conjecture to reflect further on the impact of birth order on the levels of structure and consideration.

Suffice it to say that first-born children are significantly less structured than their siblings as measured by the instrument used in this study.

B. REMARKS CONCERNING CIVILIAN VS MILITARY RESULTS

It is interesting to note initially in this discussion the comparison of civilian versus military managers on the variable of structure. The finding that military middle managers in general are less structured than their civilian counterparts dispells a commonly held belief or myth and therefore is significant.

It is interesting to note that with the exception of the Marine Corps and Army sample, each of the individual services was less structured than the civilian managers. An explanation for the propensity for structure common to the Army and Marine Corps was not easy to ascertain. An attempt was made to interview students in each of these two services to try to determine whether they could explain this phenomenon. Of the thirty-two officers interviewed, the best explanation seemed to come from a Marine Lieutenant Colonel who said, "We in the grunt services receive a great many marching orders, many of which are highly task-intensive. It is not surprising that we develop a high structural bent."

Although most of the services were found to be less structured than their civilian counterparts, they were also found to be less considerate. Unfortunately, as was pointed out in the introduction portion of this study, concern should lie

not with the levels of structure among a given group but their level of consideration, because consideration can impact on several key concerns of personnel resource management.

The most disconcerting result of this study, because of its impact upon the military service, is the level of consideration among military middle managers (and particularly the Navy and Marine Corps samples). None of the uniformed services scored significantly higher than did civilian middle managers on the consideration variable, and the Navy and Marine samples scored significantly less on consideration than their military counterparts (Appendix B, Table 5).

The level of consideration seems to be critical in a given group. Fleishman (1973) suggests that high consideration can compensate for low structure, but that high structure cannot offset low consideration. Thus, he postulates that high turnover, accident rates, worker dissatisfaction, will be correlated with high structure and low consideration, with consideration being the dominant factor. The literature indicates that low structure and high consideration is the best combination of traits for a manager to have in order to maintain subordinate job satisfaction and reduce absenteeism and turnover and accomplish goals.

The Marine Corps and the Navy samples had the lowest level of consideration of the five services sampled. In fact, if we remove the effect of the Marine Corps and Navy inputs, we

could not reject the hypothesis that military officers are at least as considerate as civilians.

Since the Marine Corps sample is so small and therefore can be considered representative of the entire organization only on a limited basis, it is justifiable to turn our attention to the Navy, and the problem of lack of consideration among their officer corps.

V. APPLICATION OF FINDINGS

The high level of unauthorized absenteeism, stress, low performance and low job satisfaction suffered by the military and the Navy, in particular, may be a reflection of a low level of consideration among the middle manager corps.

How can we improve the level of consideration among Navy middle managers? If, as former Chief of Naval Operations, Admiral Forrest P. Sherman said, "... we can take average good men and by proper training, develop in them the essential initiative, confidence and magnetism which are necessary in leadership," what are we doing now? An attempt seems to be being made to emphasize one leadership dimension throughout the Navy, via the Navy's Leadership Management Education Training (LMET), under the auspices of the Chief of Naval Education and Training (CNET). I think it would be worthwhile to look at what is being done and perhaps what can be added to improve this massive training program.

According to the mission and function statement of CNET, they are "responsible for assigned shore based education and training of Navy, certain Marine Corps, and other personnel in support of the FLEET ... and CNET participates with research and development activities in the development and implementation of the most effective teaching and training system and devices for optimal education and training" (OPNAVINST 5440, 194-1977). If CNET's responsibility is to train Navy/Marine

personnel, what is being done to improve leadership among Naval officers?

The existing officer training programs offered to Naval officers are tailored to the warfare specialty of the officer (surface, aviation, submarine). Schools are offered at the basic indoctrination level (commissioning), department head (Lt.) and prospective executive officer/commanding officer (LtCdr, Cdr) level with leadership training conducted within each. According to a 1977 study by Klemp, Munger and Spencer, "In response to a widely felt need for improved leadership and management performance at many levels in the Navy, a broad range of leadership and management training programs and course offerings has recently appeared. At present, at least 157 different courses exist" (Klemp et al., 1977).

In an attempt to standardize leadership and management training, a Leadership Management Training course (LMT) was designed by CNET and made available at major fleet centers (Norfolk, San Diego, Pearl Harbor, etc.). Units were tasked to fill the seats available for the course and had to detach individuals temporarily to attend the two week program. According to the Navy, LMT was a six-phase conceptual study of leadership and management theories. These phases were as follows:

Phase I - Responsibility, Accountability, Authority, and Power.

Phase II - Interpersonal Communications

Phase III - Management and Motivation

Phase IV - Problem Solving and Decision Making

Phase V - Organization Development

Phase VI - Practical Application in Special Managerial Problems (NAVEDTRA 38017-1975)

Students were taught such theories as Maslow's Hierarchy of Needs, Blake and Mouton's Managerial Grid, McGregor's Theory X and Y, Likert's System 4, Harris' TA Life Position, Bell's Pie, and Luft and Ingram's Johari Window.

Even with this standardized (LMT) course, problems existed with the manner in which personnel were sent to the school, and the many local programs still proliferated. In 1976 the Navy Military Personnel Center (Pers 62) contracted with McBer Inc., to review its present leadership and management training program and make recommendations. "An initial finding was that Navy leadership courses, while well received by the Fleet and participants, were not 'competency based' ... This means that there was no evidence that the knowledge or skill content taught in these courses actually predicted effective leadership performance" (Klemp et al., 1977).

At this point Pers 62 policy was to develop a program based on measurable characteristics which differentiated outstanding from average leaders. The McBer study therefore used a "new" procedure, job competency assessment, to identify what contemporary Navy leaders--especially superior leaders--actually do in handling leadership and management tasks (McClelland, 1976). This process involved the analysis of interviews of superior and average leaders (based on a

superior's evaluation) by a process called "behavioral event analysis." A total of 182 officers from both the Atlantic Fleet and Pacific Fleet were interviewed, and the results of the analysis of these interviews identified twenty-seven competencies (skills) grouped into five categories as follows:

1. Task achievement
2. Skillful use of Influence
3. Management Control
4. Advising and Counseling
5. Coercion (understanding, not use of)

The subsequent course design of LMET is a "cradle to grave" concept, tailored to five separate hierarchical levels. At each stage in the officer's career (commissioning, division officer, department head, perspective commanding officer, and executive officer, as well as the senior officer level), he or she will receive a LMET course, each different from the others, but all centered around the five factors.

There are two major differences between the old LMT and the new LMET. First, all individuals will receive a LMET course(s), as opposed to a hit or miss proposition with LMT. LMET will be taken while the individual is between PCS (permanent change of station) versus the two week TDY (temporary duty) LMT course. The second difference is that the course is designed for more practical application of the traits identified in the McBer study. The emphasis is on role playing and similar exercises.

According to the draft proposal for the training plan, the LMET course material is designed to meet the objective of improvement in the following areas: retention, crisis management, disciplinary rate, attrition, working conditions. All of these problems have shown a correlation with and can be attributed to the level of consideration among managers. Yet, only two of the five areas of training seem even remotely to deal with consideration (2 and 4). If the LMET program is to be successful and meet its objectives, it must deal more directly with the problem of consideration, or lack of it, among Navy middle managers.

Another concern that arose when reviewing the LMET program is the implementation design. Fleishman (1953) found that middle managers trained in human relations orientation appeared to experience role conflict when they returned to their jobs under superiors exhibiting a markedly different pattern of behavior, and that eighteen months after training showed no improvement on either consideration or structure, although testing directly after training showed a marked improvement in consideration. With the bottom up implementation design of LMET, the same phenomenon may develop. The program should be designed from the top down and hopefully provide a waterfall effect to the new emphasis and concern.

If we can raise the consideration level of Navy middle managers, we may be able to stem the tide of human resource problems that are Navywide. As Graen, Dansereau and Minami

(1972) point out, consideration is positively related to job satisfaction, role orientation, influence, and expectation ... The way a leader behaves may be irrelevant to his unit effectiveness, but is it unlikely to be irrelevant to his unit personnel. In a study completed by Bass (1956), a correlation of .29 was found between the extent to which a supervisor believed he ought to be considerate of his subordinates and the extent to which he was rated a successful supervisor by his superiors. These and many of the studies previously cited (see Chapt. 1, Sec B-4) point out that it appears to pay for a middle manager to show consideration, both from a personnel and personal standpoint.

VI. SUMMARY

Over the past three decades, leadership has been studied in relation to the leader's physical and psychological traits, in relation to the leader's behavior, in relation to the needs of the followers, and to a wide range of situational factors. It is not the purpose of this study to review leadership theory; that has been done quite ably by others. Findings during a review of leadership literature indicated that leadership behavior may be characterized by two dimensions: structure and consideration. A wide variety of studies have shown that the structure dimension has a positive relationship with productivity, while the consideration dimension has a positive impact on subrodinate satisfaction and cohesiveness. This study attempts to fill the void that existed concerning where successful military middle managers score on consideration and structure and what demographic factors might effect these two dimensions of leadership style.

This study attempts to provide empirical data which show how successful military managers compare to their civilian counterparts and what demographic variables impact upon the scores these managers might have. Leadership data was collected utilizing the Fleishman Leadership Opinion Questionnaire from 405 student military officers at the Naval Postgraduate School, who by virtue of their selection for advanced education were deemed to be successful.

It was found through analysis of the data that age impacts most heavily on the variables of structure and consideration: structure tends to go down, consideration up with age. This seems to support data provided in other studies. The results on comparison with civilian managers are varied. Military officers in general were found to be less structured than their civilian counterparts. Where concern arises is on the dimension of consideration. The military, in general, and the Navy and Marine Corp, in particular, were less considerate than their civilian counterparts.

If successful Naval officers have low levels of consideration, and consideration is so important from a human resource standpoint, how do we improve on this dimension among the Navy officer corps? We cannot wait for the impact of age/attrition, but must take positive steps to increase the level of consideration among the ever decreasing cadre of military officers.

The desired levels on the two dimensions of the LOQ, structure and consideration, are debatable. It is contended that we can live with the level of structure found in this sample; it is the level of consideration that may threaten the military system.

The results of this study have particular application in the design and implementation of the Navy's new Leadership Management Education and Training (LMET) program. It seems obvious that we have to emphasize consideration at the outset

of training, during the commissioning process, and continue to emphasize consideration throughout an officer's leadership training and career.

Follow-on research is crucial. The relatively small sample of service members other than the Navy makes conjecture regarding them tenuous at best. It would be intriguing to see how a considerably larger sample of Army, Air Force, and Coast Guard middle managers would compare with this predominantly Navy sample. A larger sample of other communities within the Navy (i.e., line and staff) would be of interest. The impact of actual fleet influence, rather than an educational environment, could be enlightening. The Naval Postgraduate School certainly does not have a corner on the "success" market in the military. A study of executive level managers could be undertaken to determine whether the trends found in this study continue. Moreover, a review of the leadership styles of our allies and potential adversaries may be of interest and enlighten us regarding successful leadership styles elsewhere.

The military is forced to compete for both human and monetary resources with the civilian community now and in the forseeable future. Without viable, dynamic, considerate leaders, we cannot expect to be successful in our mission of defending our nation. We would do well to keep in mind the following quotation:

> "When men lost trust and confidence in those that lead, order disintegrates into chaos, and purposeful ships into uncontrollable derelicts."
>
> Wall Street Journal
> May 14, 1952

Appendix A

THE QUESTIONNAIRE

DANGER

CAUTION

FAILURE TO COMPLETE THE ENCLOSED SURVEY COULD BE POTENTIALLY HAZARDOUS TO MY ACADEMIC HEALTH.

PLEASE TAKE TEN MINUTES TO FILL OUT THE FORMS AND RETURN TO SMC 2676

DATA REQUIRED BY THE PRIVACY ACT OF 1974
(5 U. S. C. 552a)

TITLE OF FORM	PRESCRIBING DIRECTIVE
Leadership Opinion Questionaire	Bupers Inst. 1000.21

1. AUTHORITY

Presidential Executive Order No. 9397, 22 Nov 43
Title 10, United States Code, Section 3012

2. PRINCIPAL PURPOSE(S)

The purpose of this survey is to obtain information from officers regarding where they fall on two major dimensions of supervisory leadership: consideration and structure. The intent is to compare military officers with normative data of their civilian contempories, and try to ascertain what demographics have an effect upon these two dimensions of leadership.

3. ROUTINE USES

The collected data will be used for research on a master's thesis project at the Naval Postgraduate School, Monterey, CA. The collected data will be maintained and used in strict confidence in accordance with Federal law and regulations. For the purpose of research, the data will be coded and retained on computer cards, computer files and/or individual survey forms. No information will be provided commanders/supervisors which would allow any individual to be specifically identified. Additionally, your name, social security account number, and unit are not needed on the survey.

4. MANDATORY OR VOLUNTARY DISCLOSURE AND EFFECT ON INDIVIDUAL NOT PROVIDING INFORMATION

Compliance is voluntary. There is no effect upon the individual for failure to disclose information. However, please answer all items unless you have an extreme reluctance to do so.

PRIVACY ACT STATEMENT - 26 SEP 75

PLEASE PROVIDE ME WITH A VALID RESPONSE TO THE FOLLOWING QUESTIONS, TO ASSIST ME IN MY THESIS RESEARCH:

1. SEX (MALE, FEMALE) _____
2. RACE (CAUCASIAN, NEGROID, ETC.) _____
3. AGE (IN YEARS) _____
4. RANK (EX.: 01, 02, 03) _____
5. COMMISSIONING SOURCE (EX.: USNA, ROTC, OCS, ETC.) _____
6. YEAR GROUP _____
7. BRANCH OF SERVICE (ARMY, NAVY, ETC.) _____
8. DESIGNATOR/PRIMARY MOS (BY NUMBER) _____
   (FOR C.G. OFFICERS, INDICATE WHETHER AVIATOR OR LINE)
9. CURRICULUM (BY NUMBER) _____
10. YOUR ORDER OF BIRTH _____
    (EX.: FIRST, SECOND, THIRD)

INSTRUCTIONS FOR THE FOLLOWING PAGES:

FOR EACH ITEM, CHOOSE THE ALTERNATIVE WHICH MOST NEARLY EXPRESSES YOUR OPINION ON HOW OFTEN YOU SHOULD DO WHAT IS DESCRIBED BY THAT ITEM. ALWAYS INDICATE WHAT YOU, AS A SUPERVISOR, OR MANAGER, SINCERELY BELIEVE TO BE THE DESIRABLE WAY TO ACT. PLEASE REMEMBER--THERE ARE NO RIGHT OR WRONG ANSWERS TO THESE QUESTIONS. DIFFERENT SUPERVISORS HAVE DIFFERENT EXPERIENCES AND WE ARE INTERESTED ONLY IN YOUR OPINIONS.

ANSWER THE ITEMS BY MARKING AN "X" IN THE BOX BEFORE THE ALTERNATIVE THAT BEST EXPRESSES YOUR FEELING ABOUT THE ITEM. MARK ONLY ONE ALTERNATIVE FOR EACH ITEM. IF YOU WISH TO CHANGE YOUR ANSWER, DRAW A CIRCLE AROUND YOUR FIRST "X" AND MARK A NEW "X" IN THE APPROPRIATE BOX.

WHEN YOU HAVE COMPLETED THE QUESTIONNAIRE, PLEASE RETURN IT TO SMC 2676

THANK YOU.

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1. Put the welfare of your unit above the welfare of any person in it.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

2. Give in to your subordinates in discussions with them.
- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very Seldom

3. Encourage after-duty work by persons of your unit.
- ☐ A great deal
- ☐ Fairly often
- ☐ To some degree
- ☐ Once in a while
- ☐ Very seldom

4. Try out your own new ideas in the unit.
- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

5. Back up what persons under you do.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

6. Criticize poor work.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

7. Ask for more than the persons under you can accomplish.
- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

8. Refuse to compromise a point.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

9. Insist that persons under you follow to the letter those standard routines handed down to you.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

10. Help persons under you with their personal problems.
- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

11. Be slow to adopt new ideas.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

12. Get the approval of persons under you on important matters before going ahead.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

13. Resist changes in ways of doing things.
- ☐ A great deal
- ☐ Fairly much
- ☐ To some degree
- ☐ Comparatively little
- ☐ Not at all

14. Assign persons under you to particular tasks.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

15. Speak in a manner not to be questioned.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

16. Stress importance of being ahead of other units.
- ☐ A great deal
- ☐ Fairly much
- ☐ To some degree
- ☐ Comparatively little
- ☐ Not at all

17. Criticize a specific act rather than a particular member of your unit.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

18. Let the persons under you do their work the way they think is best.
- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

19. Do personal favors for persons under you.
- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

20. Emphasize meeting of deadlines.
- ☐ A great deal
- ☐ Fairly much
- ☐ To some degree
- ☐ Comparatively little
- ☐ Not at all

21. Insist that you be informed on decisions made by persons under you.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

22. Offer new approaches to problems.

- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

23. Treat all persons under you as your equals.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

24. Be willing to make changes.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

25. Talk about how much should be done.

- ☐ A great deal
- ☐ Fairly much
- ☐ To some degree
- ☐ Comparatively little
- ☐ Not at all

26. Wait for persons in your unit to push new ideas.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

27. Rule with an iron hand.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

28. Reject suggestions for changes.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

29. Change the duties of persons under you without first talking it over with them.

- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

30. Decide in detail what shall be done and how it shall be done by the persons under you.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

31. See to it that persons under you are working up to capacity.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

32. Stand up for persons under you, even though it makes you unpopular with others.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

33. Put suggestions made by persons in the unit into operation.

- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

34. Refuse to explain your actions.

- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

35. Ask for sacrifices from persons under you for the good of your entire unit.

- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

36. Act without consulting persons under you.

- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

37. "Needle" persons under you for greater effort.

- ☐ A great deal
- ☐ Fairly much
- ☐ To some degree
- ☐ Comparatively little
- ☐ Not at all

38. Insist that everything be done your way.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

39. Encourage slow-working persons in your unit to work harder.

- ☐ Often
- ☐ Fairly often
- ☐ Occasionally
- ☐ Once in a while
- ☐ Very seldom

40. Meet with the persons in your unit at certain regularly scheduled times.

- ☐ Always
- ☐ Often
- ☐ Occasionally
- ☐ Seldom
- ☐ Never

Appendix B

This appendix contains the results of the Student's t-test conducted on an IBM 360 utilizing the Statistical Package for the Social Sciences (SPSS).

Appendix B

TABLE 1

T-TEST RESULTS (AGE)

HS 1 H_o: $\mu_{S\,\bar{A}} \geq \mu_{S\,\underline{A}}$

Test #	VARIABLE	N	MEAN	STD DEV	DIFFERENCE	T-VALUE	dF	SIGNIF. LEVEL
HS 1	GE 32	193	47.6943	7.222	1.2774	-1.82	403	.035
AGE	STRUCTURE LT 32	212	48.9717	6.906				

HC 1 H_o: $\mu_{C\,\bar{A}} \leq \mu_{C\,\underline{A}}$

HC 1	GE 32	193	52.0052	6.000	1.1231	1.85	403	.0325
AGE	CONSIDERATION LT 32	212	50.8821	6.192				

Appendix B

TABLE 2

T-TEST RESULTS (RANK)

HS 2 H_o: $\mu_{S\,\overline{04}} \geq \mu_{S\,\underline{03}}$

Test #	VARIABLE	N	MEAN	STD DEV	DIFFERENCE	T-VALUE	dF	SIGNIF. LEVEL
HS 2	GE 04	111	47.3784	6.964				
					1.3563	1.72	403	.0425
RANK	STRUCTURE LT 04	294	48.7347	7.097				

HC 2 H_o: $\mu_{C\,\overline{04}} \leq \mu_{C\,\underline{03}}$

HC 2	GE 04	111	51.7658	6.382				
					.4801	.70	403	.241
RANK	CONSIDERATION LT 04	294	51.2857	6.02				

Appendix B

TABLE 3

T-TEST RESULTS (COMM SRC)

HS 3 H_o: μ_S acad $\leq \mu_S$ ocs

Test #	VARIABLE	N	MEAN	STD DEV	DIFFERENCE	T-VALUE	dF	SIGNIF. LEVEL
HS 3	ACAD	116	49.1810	7.751				
					1.6516	1.77	250	.0385
COMM SRC	STRUCTURE OCS	136	47.5294	7.024				

HC 3 H_o: μ_C acad $\geq \mu_C$ ocs

HC 3	ACAD	116	50.9310	6.714				
					1.189	1.48	250	.0695
	CONSIDERATION OCS	136	52.1250	6.058				

Appendix B

TABLE 4

T-TEST RESULTS (YRS COMM SERV)

HS 4 H_o: $\mu_{S\,\overline{9}} \geq \mu_{S\,\underline{8}}$

Test #	VARIABLE	N	MEAN	STD DEV	DIFFERENCE	T-VALUE	dF	SIGNIF. LEVEL
HS 4	GE 09	179	47.8547	7.160				
					.9108	1.29	403	.0995
YR COMM SERV	STRUCTURE LT 09	226	48.7653	7.002				

HC 4 H_o: $\mu_{C\,\underline{9}} \leq \mu_{C\,\underline{8}}$

HC 4	GE 09	179	52.2402	6.119				
					1.4747	2.42	403	.008
YR COMM SERV	CONSIDERATION LT 09	226	50.7655	6.054				

Appendix B

TABLE 5

T-TEST RESULTS (SERVICE)

HS 5 H_o: $\mu_{S\ nav} \leq \mu_{S\ other}$

Test #	VARIABLE	N	MEAN	STD DEV	DIFFERENCE	T-VALUE	dF	SIGNIF. LEVEL
HS 5	NAV	332	48.4217	6.951				
					.3258	.36	403	.3695
SERVICE	STRUCTURE OTHER	73	48.0959	7.672				

HC 5 H_o: $\mu_{C\ nav} \geq \mu_{C\ other}$

	NAV/MAR	332	51.1476	6.132				
					1.4962	1.90	403	.028
SERVICE	CONSIDERATION OTHER	73	52.6438	5.947				

Appendix B

TABLE 6

T-TEST RESULTSS (DESIGNATOR)

HS 6 H_o: $\mu_{S\ line} \leq \mu_{S\ staff}$

Test #	VARIABLE	N	MEAN	STD DEV	DIFFERENCE	T-VALUE	dF	SIGNIF. LEVEL
HS 6	LINE	173	49.1272	6.727				
					2.4503	2.53	236	.006
DESIGNATOR	STRUCTURE STAFF	65	46.6769	6.459				

HC 6 H_o: $\mu_{C\ line} \geq \mu_{C\ staff}$

HC 6	LINE	173	51.2543	6.207				
					.1303	.15	236	.441
DESIGNATOR-	CONSIDERATION STAFF	65	51.3846	5.567				

Appendix B

TABLE 7

T-TEST RESULTS (CURRICULUM)

HS 7 H_o: $\mu_{S\,\underline{T}} \geq \mu_{S\,\overline{T}}$

Test #	VARIABLE	N	MEAN	STD DEV	DIFFERENCE	T-VALUE	dF	SIGNIF. LEVEL
HS 7	NON TECH	146	47.9110	6.865				
					.7068	.96	403	.1675
CURRICULUM	STRUCTURE OTHER	259	48.6178	7.196				

HC 7 H_o: $\mu_{C\,\underline{T}} \leq \mu_{C\,\overline{T}}$

HC 7	NON TECH	146	52.4247	6.115				
					1.5753	2.50	403	.0065
CURRICULUM	CONSIDERATION OTHER	259	50.8494	6.060				

Appendix B

TABLE 8

T-TEST RESULTS (BIRTH ORDER)

HS 8 H_o: $\mu_{S\ F.B.} \geq \mu_{S\ other}$

Test #	VARIABLE	N	MEAN	STD DEV	DIFFERENCE	T-VALUE	dF	SIGNIF. LEVEL
HS 8	FIRST	247	47.6721	6.943				
					1.7709	2.47	403	.007
BIRTH	STRUCTURE OTHER	158	49.4430	7.173				

HC 8 H_o: $\mu_{C\ F.B.} \leq \mu_{C\ other}$

HC 8	FIRST	247	51.7126	6.350				
					.7569	1.21	403	.1075
BIRTH	CONSIDERATION OTHER	158	50.9557	5.729				

Appendix C

The following mathematical notations should be explained prior to reporting the results of the hypothesis tests:

μ = mean

σ = standard deviation

N = population size

σ^2 = variance

α = alpha, the probability of committing a type 1 error, or rejecting the null hypothesis when it is true

The formula for computing t is as follows

$$t = \sqrt{\frac{\mu_1 - \mu_2}{s \quad \frac{1}{N_1} + \frac{1}{N_2}}}$$

when

$$s = \sqrt{\frac{(N_2-1)\sigma_1^2 + (N_2-1)\sigma_2^2}{N_1 + N_2 - 2}}$$

Due to the size of the samples, normality of the sampling distribution is assumed.

Appendix C

HS - 9

Military vs Civilian
Structure

H_o: $\mu_{S\ mil} \geq \mu_{S\ civ}$

Military		Civilian	
N	= 405	N	= 493
μ	= 48.363	μ	= 49.7
σ	= 7.018	σ	= 5.9
σ^2	= 50.098	σ^2	= 34.81

$t\alpha = -1.282$

$t = -1.5435$

We can reject the null hypothesis if $t < -1.282$; therefore we must reject H_o and assume the alternate hypothesis is true, that military officers are less structured than their civilian counterparts.

Appendix C

HC - 9

Military vs Civilian
Consideration

H_o: $\mu_{C\ mil} \leq \mu_{C\ civ}$

Military		Civilian	
N	= 405	N	= 493
μ	= 51.417	μ	= 52.00
σ	= 6.119	σ	= 5.5
σ^2	= 37.447	σ^2	= 30.25

$t\alpha = 1.282$

$t = -.752$

We can reject the null hypothesis if $t > 1.282$; therefore we cannot reject H_o and must assume it is true that military officers are less consideration than their civilian counterpart.

Appendix C

HS - 10

Navy vs Civilian
Structure

H_o: $\mu_{S\ nav} \geq \mu_{S\ civ}$

Navy		Civilian	
N	= 297	N	= 493
μ	= 48.215	μ	= 49.7
σ	= 6.807	σ	= 5.9
σ^2	= 46.338	σ^2	= 34.81

$t\alpha = -1.282$

$t = -1.616$

We can reject the null hypothesis if $t < -1.282$; therefore we must reject H_o and assume the alternate hypothesis is true, that Naval officers are less structured than the civilians they were compared with.

Appendix C

HC - 10

Navy vs Civilian
Consideration

H_o: $\mu_{C\ nav} \leq \mu_{C\ civ}$

Navy		Civilian	
N	= 297	N	= 493
μ	= 51.273	μ	= 52.0
σ	= 6.009	σ	= 5.5
σ^2	= 36.104	σ^2	= 30.25

$t\alpha = 1.282$

$t = -.8687$

We can reject the null nypothesis if $t > 1.282$; therefore we cannot reject H_o and must assume it is true that naval officers are less considerate than the civilians they were compared to.

Appendix C

HS - 11

Army vs Civilian
Structure

H_o: $\mu_{S\ army} \geq \mu_{S\ civ}$

Army		Civilian	
N	= 41	N	= 493
μ	= 50.756	μ	= 49.7
σ	= 7.493	σ	= 5.9
σ^2	= 56.145	σ^2	= 34.81

$t\alpha = -1.303$

$t = .5378$

We can reject the null hypothesis if $t < -1.303$; therefore we cannot reject H_o and must assume that it is true that Army officers are more structured than their civilian counterparts.

Appendix C

HC - 11

Army vs Civilian
Consideration

H_o: $\mu_{C\ army} \leq \mu_{C\ civ}$

Army		Civilian	
N	= 41	N	= 493
μ	= 52.610	μ	= 52.0
σ	= 6.503	σ	= 5.5
σ^2	= 42.289	σ^2	= 30.25

t_α = 1.303

t = .3360

We can reject the null hypothesis if t > 1.303; therefore we cannot reject H_o and must assume it is true that Army officers are less consideration than the civilians they were compared with.

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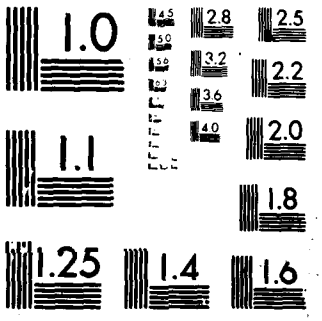

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Appendix C

HS - 12

Marine Corps vs Civilian Structure

H_o: $\mu_{S\ m.c.} \geq \mu_{S\ civ}$

Marine Corps		Civilian	
N	= 35	N	= 493
μ	= 50.177	μ	= 49.7
σ	= 7.969	σ	= 5.9
σ^2	= 63.505	σ^2	= 34.81

$t\alpha = -1.310$

$t = .2252$

We can reject the null hypothesis if $t < -1.310$; therefore we cannot reject H_o and must assume the Marine Corps is more structured than their civilian counterparts.

Appendix C

HC - 12

Marine Corps vs Civilian Consideration

H_o: $\mu_{C\ m.c.} \leq \mu_{C\ civ}$

Marine Corps		Civilian	
N	= 35	N	= 493
μ	= 50.086	μ	= 52.0
σ	= 7.106	σ	= 5.5
σ^2	= 50.495	σ^2	= 30.25

$t\alpha = 1.310$

$t = -.9710$

We can reject the null hypothesis if $t > 1.310$; therefore we cannot reject H_o and we must assume Marine Corps officers are less considerate than their civilian counterparts.

Appendix C

HS - 13

Coast Guard vs Civilian Structure

H_o: $\mu_{S\ c.g.} \geq \mu_{S\ civ}$

Coast Guard		Civilian	
N	= 19	N	= 493
μ	= 44.421	μ	= 49.7
σ	= 6.931	σ	= 5.9
σ^2	= 48.038	σ^2	= 34.81

$t\alpha = -1.330$

$t = -1.902$

We can reject the null hypothesis if $t < -1.330$; therefore we can reject H_o and assume that the alternate hypothesis is true that Coast Guard officers are less structured than the civilians they were compared with.

Appendix C

HC - 13

Coast Guard vs Civilian Consideration

H_o: $\mu_{C\ c.g.} \leq \mu_{C\ civ}$

Coast Guard		Civilian	
N	= 19	N	= 493
μ	= 52.526	μ	= 52
σ	= 5.571	σ	= 5.5
σ^2	= 31.036	σ^2	= 30.25

$t\alpha = 1.330$

$t = .2045$

We can reject the null hypothesis if $t > 1.330$; therefore we cannot reject H_o and must assume Coast Guard officers are less considerate than the civilians they were compared with.

Appendix C

HS - 14

Air Force vs Civilian Structure

H_o: $\mu_{S\ a.f.} \geq \mu_{S\ civ}$

Air Force		Civilian	
N	= 13	N	= 493
μ	= 45.077	μ	= 49.7
σ	= 6.211	σ	= 5.9
σ^2	= 38.516	σ^2	= 34.81

$t\alpha = -1.356$

$t = -1.391$

We can reject the null hypothesis if $t < -1.356$; therefore we can reject H_o and must assume the alternate hypothesis is true that Air Force officers are less structured than their civilian counterparts.

Appendix C

HC - 14

Air Force vs Civilian

H_o: $\mu_{C\ a.f.} \leq \mu_{C\ civ}$

Air Force		Civilian	
N	= 13	N	= 493
μ	= 52.923	μ	= 52
σ	= 4.958	σ	= 5.5
σ^2	= 24.581	σ^2	= 30.25

$t\alpha = 1.356$

$t = .299$

We can reject the null hypothesis if $t > 1.356$; therefore we cannot reject H_o and must assume that Air Force officers are less considerate than their civilian counterparts.

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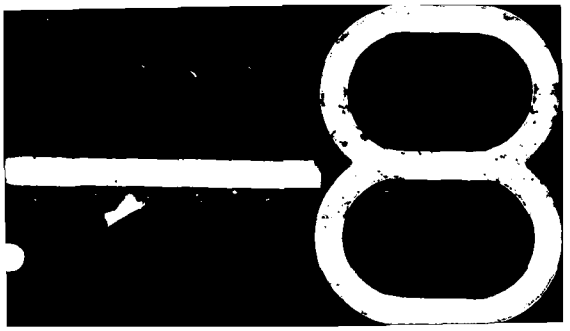
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